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Foundations of the economic and social history of the United States: Apologia

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Apologia

**Foundations
of the Economic and
Social History of the
United States**

by Scott A. Albers

For Andrew, Alison and Rachel

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A more extensive version of this paper entitled “*On The Mathematic Prediction of Economic and Social Crises: Toward a Harmonic Interpretation of the Kondratiev Wave*” was deposited with the Munich Repository on March 31, 2012. See online at <http://mpa.ub.uni-muenchen.de/37771> MPRA Paper No. 37771.

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For the positions taken and the methods used herein I alone am responsible

The Idea

Human consciousness, our awareness of something, is generally considered to be a dependent variable, something arising from a mass of complex biologic neural connections within the brain attaching us to the reality in which we live. The natural consequence of this view is that when death removes the physical mechanism of consciousness, consciousness and awareness must end as well. The view is well-stated by William Shakespeare in the character of Macbeth in the final act.

Tomorrow, and tomorrow, and tomorrow
Creeps in this petty pace from day to day
To the last syllable of recorded time,
And all our yesterdays have lighted fools
The way to dusty death. Out, out brief candle!
Life's but a walking shadow, a poor player
That struts and frets his hour upon the stage
And then is heard no more. It is a tale
Told by an idiot, full of sound and fury,
Signifying nothing.

Macbeth, Act 5, Scene 5, lines 22-31

This view might be contrasted with the opposing point of view, i.e. that consciousness is an independent variable vaguely synonymous with “soul” or “spirit” and that this incorporeal, non-material animus or life-spirit collects around it the material components necessary for it to take part in a material world of persons, places and events. Victor Hugo summed up this point of view very well.

I am a soul. I know well that what I shall render up to the grave is not myself.
That which is myself will go elsewhere. Earth, thou art not my abyss!

Victor Hugo

The question arises: How does a material organism – “the brain” – generate or connect to a non-material psychological state “awareness”?

This set of three volumes argues that the mind – human consciousness – may be measured by considering mathematically the aggregate of that consciousness, i.e. social history. From this beginning theme of discussion three questions must arise.

1. *How might this measurement be made?*
2. *Of what value is this measurement?* and
3. *How does this measurement affect our present understanding of the reality in which we live?*

Each of these three volumes attempts to provide answers to one of these questions.

It may be helpful at the outset to give a simple example to illustrate the idea of human consciousness which will be used in these essays.

Imagine that a set of wooden blocks is constructed such that each of the six sides of the block are given the same letter. Imagine that these 26 “alphabet blocks” are placed into a bag and that a person is asked to pick from the bag each of the blocks and place them in order of first chosen to last chosen. My question to the reader is to calculate the odds of selecting randomly the standard alphabet order of A, B, C, D, E, F, etc.

The answer is that the odds of this occurring are 1 to 26 factorial, or roughly:

1 out of 400,000,000,000,000,000,000,000 chances.

If we can agree that the statistical odds against selecting randomly these blocks in their correct order is enormous, then a second question may be asked. What is the likelihood of doing the same thing twice in a row? If this is calculated as well, we must conclude that the statistical likelihood of such an accomplishment is exponentially even more remote.

In fact, the answer is the above number squared, or roughly:

1 out of $400,000,000,000,000,000,000,000^2$ chances.

We must conclude further that for every turn we take at this task, the likelihood of success becomes ever more statistically removed from our common experience.

Imagine next that we ask a five year old child who has been taught his or her “A, B, Cs” to open the bag, pull out the letters one by one in their correct order and place the blocks lined up correctly on the table. It would seem very likely that a child of ordinary intelligence could perform this task repeatedly, even ten times in an hour, as long as the attention span of the child is maintained.

From this simple example I propose that the mind of the child – the child’s consciousness – has overcome the vast statistical impossibility of the first task, i.e. the selection of the same order as a matter of random occurrence.

Therefore I propose that that the sure and only importance of consciousness is its ability to order things correctly.

It may be argued that there is no evidence whatsoever of a pre-life or post-death existence for consciousness which can not fully be explained by a strictly material understanding of the brain, the physical world, etc. In response to this view, I would ask regarding the following two video clips: What understanding of matter, energy, time, etc. permits the following very young children to so completely master complicated musical works so beyond the scope of their peers?

Regarding the second video, the following comments from six-year old Emily Bear are particularly interesting. She states: “This comes out to me. It comes out.” In response to the question “Where does it come from?” she states: “I don’t know. Probably my heart.”

http://www.youtube.com/watch?v=bI_xx82oTO8
<http://www.youtube.com/watch?v=vUx4t4W4eVY>

I suggest in these essays that the ability of consciousness to create order from chaos may be considered an actual dimension of our experience, albeit exhibited at different levels of reality. In these three volumes consciousness is presented as an ordering force in the universe, one which is as real, as inherent and as universal as latitude, longitude, altitude and time are to a sphere, in effect, an investigate-able, measurable fifth dimension of reality.

Consequently each volume of this work seeks to answer one of the above questions.

1. *How might this measurement be made?*

This first volume – *Empirical Foundations of the Economic and Social History of the United States* – is the first of three sets of essays. In this first set the economic and social history of the United States is shown to be a “system of movement,” i.e. a logical and mathematic progression of events which may be analyzed according to a set formula. The model proposed demonstrates that the citizen’s individual “consciousness” is writ large in the macro-economic statistics of this unique economy and thereby made available for inspection at other levels of reality.

2. *Of what value is this measurement?*

The second volume – *Theoretical Foundations of the Economic and Social History of the United States* – presents five other systems of movement, demonstrating that the pattern displayed in this first volume may be found at other levels of reality including set theory, chemistry, psychology, law and culture.

3. *How does this measurement affect our present understanding of the reality in which we live?*

The third volume – *Metaphysical Foundations of the Economic and Social History of the United States* – presents a formal theory of reality which incorporates the “consciousness” examined in the first two volumes as a formal “fifth dimension” of our experience. This is given in detail for music, and then used to re-analyze the economic material of the first and second volumes.

This arrangement of connected ideas provides the basis for stating the relationship of three things – Mind, Consciousness, Reality – as formulated herein. Although the three volumes may be read in any order, they are presented with the following understandings.

Reality is that set of logical relationships which give rise to Consciousness as an essential aspect of that Reality as a coherent, functional, operating level of related ideas and facts. A set of ideas and facts which are not functionally related, coherent and operating towards some goal will not seem “real.” Conversely, any set of ideas and facts which meet these expectations will be deemed to be “real” at some level of understanding.

Consciousness is that pattern which arises out of Reality and which gives a repeated and systematic understanding to every level of Reality.

Mind is that localized version of Consciousness which actively orders a particular level of Reality in a specific and testable fashion.

The Beginning

These ideas are unusual and some explanation must be given for their development.

Sometime during my freshman and sophomore years of high school, circa 1973-1974, I came across the entry "Philosophy" in the *Encyclopedia Britannica*. The following paragraphs, taken from this article, are the genesis of the three volumes of essays which follow this introduction.

Parmenides of Elea (flourished first half of the 5th century BC) ... insisted that "what is" cannot have come into being and cannot pass away because it would have to have come out of nothing or to become nothing, whereas nothing by its very nature does not exist. There can be no motion either; for it would have to be a motion into something that is - which is not possible since it would be blocked - or a motion into something that is not - which is equally impossible since what is not does not exist. Hence everything is solid, immobile being. The familiar world, in which things move around, come into being, and pass away, is a world of mere belief (doxa). ... Parmenides tried to give an analytical account of this world of belief, showing that it rested on constant distinctions between what is believed to be positive - i.e. to have real being, such as light and warmth - and what is negative - i.e. the absence of positive being, such as darkness and cold.

I found this discussion absolutely impenetrable, completely beyond my ability to understand. The situation changed with the next paragraph. The article continues:

(O)f very great importance in the history of epistemology was Zeno of Elea (flourished mid-5th century), a younger friend of Parmenides. Parmenides had, of course, been severely criticized because of the strange consequences of his doctrine that in reality there is no motion and no plurality either because there is just one solid being. To support him, however, Zeno tried to show that the assumption that there is motion and plurality leads to consequences that are no less strange. This he did by means of his famous paradoxes, saying that the flying arrow rests since it can neither move in the place in which it is nor in a place in which it is not and that Achilles cannot outrun a turtle because when he has reached its starting point, the turtle will have moved to a further point, and so on *ad infinitum* - *that, in fact, he cannot even start running, for, before traversing the stretch to the starting point of the turtle, he will have to traverse half of it and again half of that and so on ad infinitum.* ...

All of these paradoxes are derived from the problem of the continuum. Although they have often been dismissed as logical nonsense, many attempts have also been made to dispose of them by means of mathematical theorems, such as the theory of convergent series or the theory of sets. *In the end, however, the difficulties inherent in his arguments have always come back with a vengeance, for the human mind is so constructed that it has two ways of looking at a continuum that are not quite reconcilable.* (emphasis added)

My Approach

It is not too much to say that the above lines in italics have shaped virtually all of my intellectual life. Raised as the German-Norwegian eldest-child son of an eldest son and an eldest-child daughter in a devout Missouri Synod Lutheran family of four ministers and four Lutheran school teachers (two of whom were missionaries), there can be no doubt that the concept of an INFINITE (i.e. God), standing between any point and the placement of any “next” point, must be taken as absolutely key.

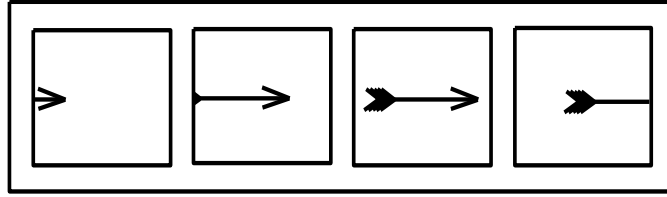
In so far as *any* point on the line has next to it an *infinite* number of points, and in so far as this infinity compounds itself with *every* possible division of the line and that this possibility of division is itself infinite, Zeno must be taken as absolutely correct:

Motion from point A to point B on the line is impossible in as much as nothing finite may translate, transmit, transfer or move itself across an infinite in any fashion.

To say otherwise struck me as a contradiction *ab initio*, wrong from the get-go. One might as well insist that a ruler marked out in inches can measure the distance between the atomic core and the first shell of an electron. The finite and the infinite cannot and do not mix. To state otherwise would be to insult God, the source and creator of the universe itself. Consequently the obvious correct-ness of Zeno’s logic, as contrasted with its obvious “wrongness” in so far as it flies in the face of all experience, have led me to develop the three volumes of essays presented here.

I came across quickly the idea that the Paradox might be resolved by considering the possibility of a “blinking” universe, not unlike a three dimensional movie. As viewed in this light, each point along the line described by Zeno is actually a picture of the universe taken at that particular moment. It would appear that Zeno’s Paradox actually compels this view of reality if the Paradox is to be reconciled with the observation of the motion which we see around us. This idea is presented almost exactly in the book *Infinity and the Mind* by Rudy Rucker.

The basic intuition about an Absolutely Continuous line is that such a line cannot be conceived of as a set of points. Zeno expresses this intuition in his paradox of the arrow. The paradox of the arrow seems to constitute a proof that space is not made of points. For, Zeno argues, consider an arrow that flies from the bow to the target. If space is made up of points, then the flight of the arrow can be decomposed into an infinite set of frozen movements, movements where the tip of the arrow successively occupies each of the points between bow and target. The problem is that while the arrow is at any one fixed point, say the halfway point, the arrow is motionless. How can the flight of the arrow be a sequence of motionless stills? Where did the motion go?



A movie of an arrow's flight is, of course, a sequence of motionless stills. But this does not disturb us, as we realize that the arrow moves in between the pictures. The problem Zeno raises is that if space is made of points, and if a still is taken at each point, then there is no possibility of "moving between the pictures" ... *because there is nothing between the pictures.*

My answer to Zeno's Paradox is that the arrow in flight is represented in the physical sciences as a combination of four dimensions, three of space, one of time. Our ability to grasp each of these frames of the "movie" of an arrow's flight brings into these four dimensions a new fifth dimension, that of consciousness.

This consciousness is one born of necessity, the idea that just as the thing tying together the frames of the movie is the person watching the movie, so must the universe have some additional force of consciousness which itself is capable of overcoming Zeno's Paradox which exists throughout the three dimensions of space and one dimension of time. In short, there must be some overarching consciousness which ties together the universe, just as the consciousness of the person watching the movie ties together the frames of the movie into a single, believable whole perception and experience of motion, albeit motion on the screen.

I reasoned that if we set out to explore consciousness as the thing linking up the frames of the movie, we may find a way to dissect this consciousness by looking at various levels of consciousness, including a legal level, an economic level, a psychologic level, a national level, a cultural level, etc. It did not strike me as unreasonable to think that the consciousness of a group of people might be reflective of the underlying consciousness of a single person within the group itself. If these larger areas of consciousness beyond the small group follow the same sort of "fractal" development, the patterns of consciousness might be more obvious, rather than less obvious, as we go to higher and higher levels of group activity.

Moreover, if this pattern in fact exists, it may also be evident in the organization of other levels of reality as well, i.e. chemistry, mathematics, physics, etc.

And if such a congruent pattern between levels exists, it may be provable by experiment.

I have been encouraged in this effort by the discovery that Zeno's Paradox has not been relegated to the category of solved issues in mathematics. According to Rucker, various mathematicians have come to the conclusion that the line segment as described is a set of distinct points between which an infinite number of additional points might be plotted.

This view of space has been held by several philosophers since Zeno, notably C. S. Pierce and, perhaps, Kurt Godel. Godel distinguishes between the set of points described in set theoretic analysis and the continuous line of space intuition: 'According to this intuitive concept, summing up all the points, we still do not get the line; rather the points form some kind of scaffold on the line.'

Pierce goes further than this. According to him, a truly continuous line is so richly packed with points that no conceivable set, no matter how large, can exhaust the line. There should not just be one point between all of $1/2$, $2/3$, $3/4$, $4/5$, $5/6$, ... and 1. There should be ∞ points, \aleph points, Absolutely Infinitely many!

In short, I seek in these essays to determine the structure of consciousness, the operation of a fifth dimension of our reality, at least as presented under this understanding of Zeno's Paradox.

The significance of the Fifth Dimension

My use of the term "fifth dimension" arises independently of any established expertise in the physical sciences. I viewed it as simply obvious that the typical Cartesian coordinate system provides us with a proper way of viewing space vis-à-vis the x, y and z coordinate axes, and the addition of time to this picture provides the possibility of a three-dimensional moving hologram, a three dimensional movie in which all the universe takes place and may be considered. A fifth dimension would simply add into this picture the possibility of joining these various frames into the single, unbroken "movie" of the reality which we see around us.

In the effort to write about such a topic it has been my privilege to employ a number of tutors of physical science to review these papers and help to improve them. Through one, Jeremy Marcq of Boston University, it has come to my attention that in 1919 Theodor Kaluza re-wrote the equation for general relativity using an additional "fifth dimension" the characteristics of which were (1) that it must be "space-like" and (2) that it must always equal "1" and therefore be undetectable by experiment. The resulting equations replicated the original equations for general relativity but included an additional set of equations which duplicated Maxwell's equations for electro-magnetism precisely. In this fashion gravity and electro-magnetism have been unified, but on the hypothesis of a space-like "fifth dimension" which can not be detected by any physical experiment.

It appears to me that if consciousness can be taken as this fifth dimension, which Rucker's analogy of the cinematic arrow suggests, then the investigation of consciousness proposed may bear fruit. To repeat, if we understand reality as a set of congruent tiers of organization – mathematic, atomic, chemical, biologic, psychologic, legal, national, cultural, economic, philosophic – the very congruence examined may lead us in the direction of an understanding of consciousness which is far more amenable to experiment and testing than we have at the present time. In this fashion Zeno's Paradox may be answered and explored further and as a fundamental part of the universe which I suggest Zeno's logic merits. It is also possible that the if a successful connection between this effort and the mathematics of general relativity and electro-magnetism as re-written and re-interpreted by Kaluza may be made, a new interpretation of the entire scope of our understanding of "reality" might be achieved.

Consciousness as a Circuit

After arriving at the above program I began to look at the things in my life which displayed motion. I was a student of the artist-in-residence Nuita Isserlin of Eckert College at the time, and music definitely displays a form of motion. Each note may be analogized to a point in a continuum, and the consciousness of the performer links these notes together in the right spot at the right time with the right dynamics.

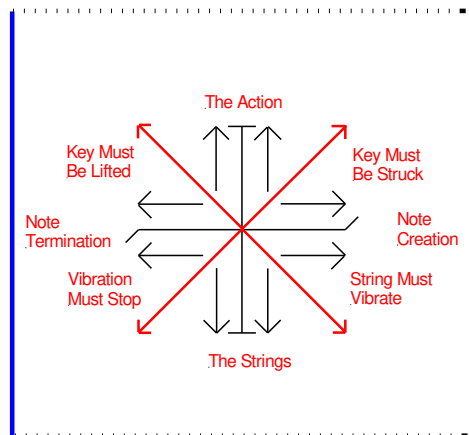


Perhaps a systematic understanding could be given to motion under the challenge of Zeno's Paradox if we admit that motion across a scaffold of points is possible only with a new understanding of the scaffold. I suggest that the notes in a piece of music display a form of consciousness which may be investigated. The analogy is as follows.

There are four essential aspects of playing a musical note on the piano. These are:

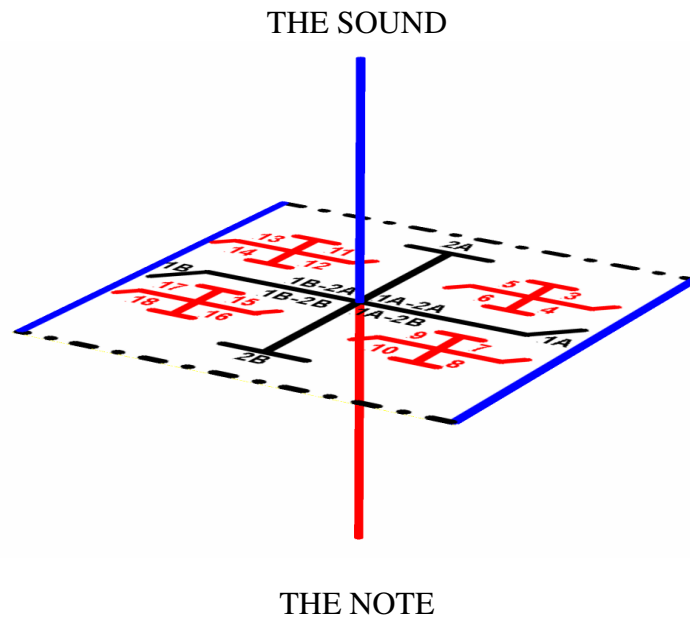
1. The key must be struck.
2. The string must vibrate.
3. The key must be lifted.
4. The string's vibration must stop.

The formulation of these four points is presented as follows, and the central terms of the figure perhaps can be anticipated by the reader.



On the right hand we have a vertical blue line representing the tension which exists between the key being struck and the string vibrating. On the left hand we have a vertical blue line representing the tension between a key being lifted and the vibration stopping.

An “Image Axis” may be added to this model, one which contrasts the “sound” of vibrating strings with a finished “note” of music as terminated by the performer at a particular time.



In this regard it must be emphasized that the termination of a sound by the performer is of equal significance as the creation of the note itself. The introductory bars of Beethoven’s Fifth Symphony are meaningless without the swift repetition of three notes, each short, followed by a sustained fourth note a major third lower in pitch.

Consequently three dichotomies are conjoined in the above model:

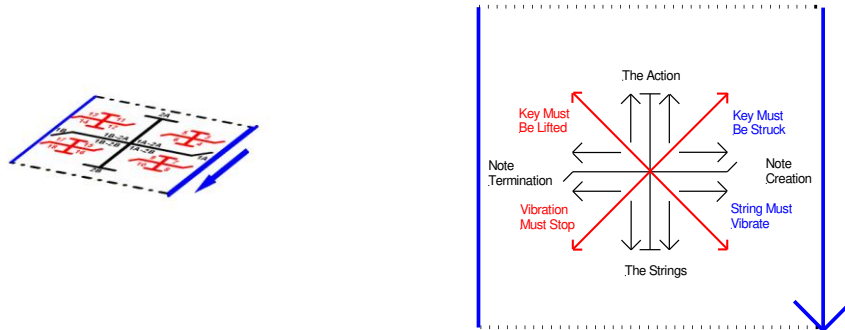
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|--------------|-----|------------------------|
| (1) creation | vs. | termination, |
| (2) action | vs. | vibrating strings, and |
| (3) sound | vs. | finished note. |

The interaction of these three necessary oppositions are key in the understanding of the three volumes of essays which follow.

The “scaffold” upon which notes are built (and which by analogy points along a line must possess as well) is as follows.

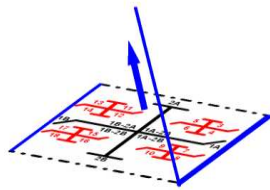
Each note in a piece of music is connected by way of a similar underlying circuit.

- 1) The key/hammer strikes the string, which then vibrates.



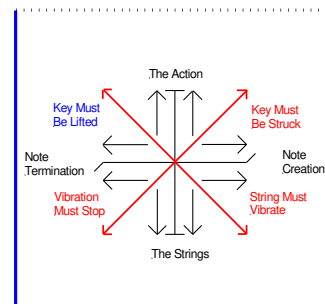
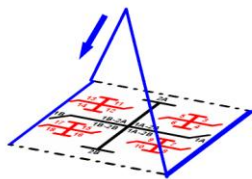
- 2) This vibration creates the sound of piano performance.

THE SOUND



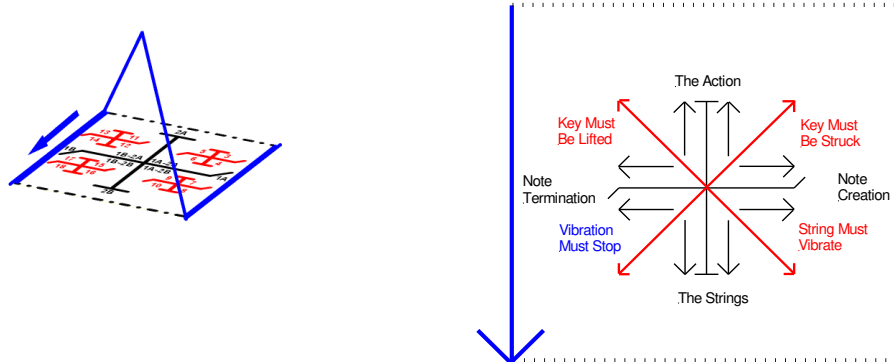
- 3) A note - a sound which has ended on time - is created by lifting of the key...

THE SOUND



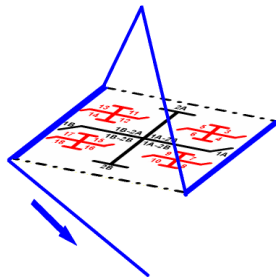
4) ... Which permits the damper to fall onto the string, thereby stopping the vibration and the sound at a particular time in the piece of music.

THE SOUND



5) This in turn terminates the duration of the note and provides a basis to understand the relationship of the note to the rest of the piece of music,

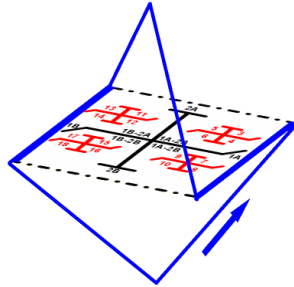
THE SOUND



THE NOTE

6) ... Which in turn gives rise to a new understanding of the note, i.e. it is now a particular note in the context of the rest of the piece.

THE SOUND

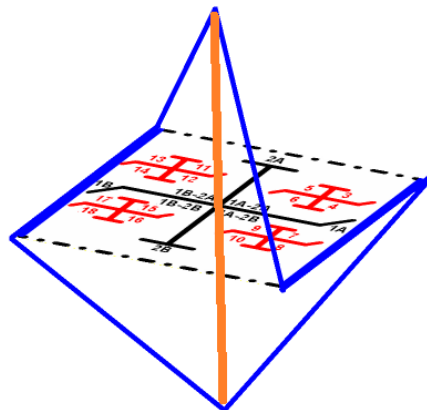


THE NOTE

7) Each note of music represents a circuit of relationships, as follows. The contrast between the ontologic “sound” and the epistemologic “note” provides a basis for exploring the possibility of a “fifth dimension,” a “space-like” “in-out” dimension which always brings a fullness or “one-ness” to any other set of dimensions, one which is not immediately detectable by experiment and yet which exists necessarily, and which arises from the previous four mentioned, i.e.

1. The key must be struck.
2. The string must vibrate.
A sound is heard
3. The key must be lifted.
4. The string’s vibration must stop.
5. A note has been played.

THE SOUND



THE NOTE

Economics and the Principle of Electron Uncertainty

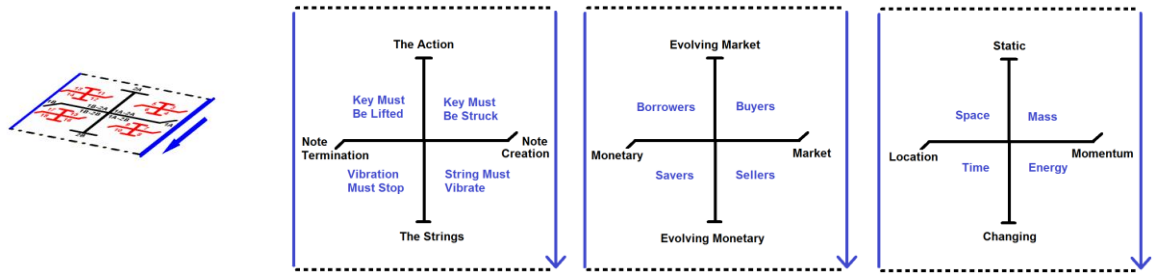
This circuit was known to me at the time I began my first study of economics and natural philosophy as a freshman in college in 1977. It became clear that this circuit could be used to explore these two very different phenomena simultaneously. I reasoned as follows.

Economics is the study of money and its relationship to the things money buys. Physics is the study of space and time and the things which these two contain.

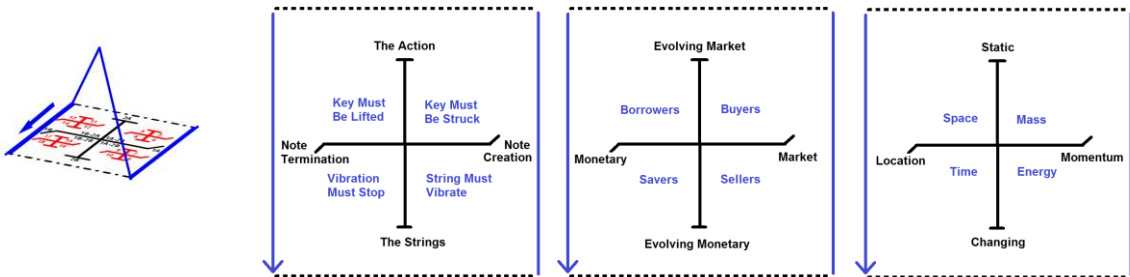
In economics it is impossible to both pay for something and keep the cash paid. One may either keep one's cash and forego the item, or possess the item and release the money.

In the study of the electron one may obtain complete information about the location (space-time coordinate) of an electron but in doing so one loses the ability to obtain complete information about its momentum (mass-energy coordinate).

If we let "mass-energy" and "buyer-seller" represent the physical-ness of physics and "real" sector of goods and services in economics respectively, these may both be associated with the "note creation" part of the circuit above.



Conversely, we may let "space-time" and "savers-borrowers" represent the non-physical part of physics (location) and the monetary sector of the economy in the circuit above, in connection with "note termination."



Viewed in this way the un-availability of both a space-time and mass-energy coordinate for the electron makes the same sort of sense that the purchase of an object requires parting with the cash necessary for the purchase. The oppositional aspects of economics, electron behavior and piano performance are thereby quite clearly laid out in a fashion which is both simple and direct.

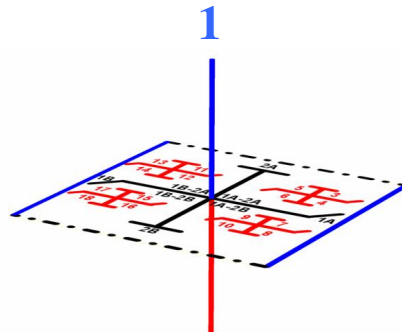
Consciousness as a Number

If success in fundamental physics and economics is obtained with this simple circuit then a re-examination of the concept of music may bring about further insights. Below is the melody of the song “Pop Goes the Weasel.”

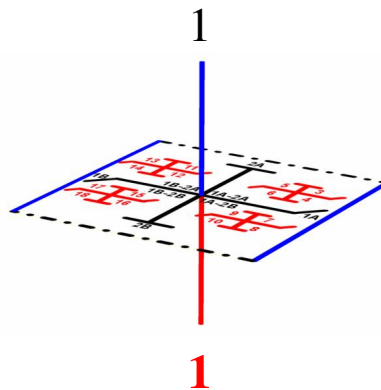


We may unify the notion of Sound and Note mathematically if we use this “Image Axis” to generate a series of numbers which can be used to join these two poles. For example, if we give the number “one” to the first vibration of the piece

First string vibrates.



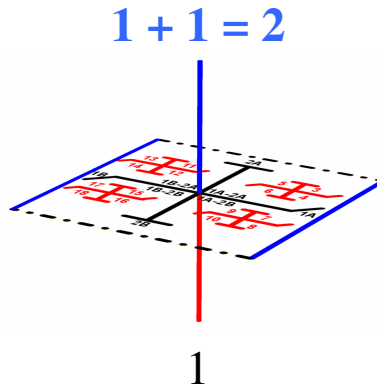
... we can see that the “note” itself revolves entirely upon the sense that the sound has ended.



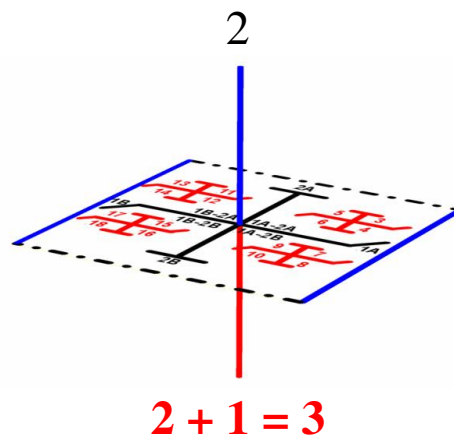
First note is heard.

Once this “note” has ended, a new sound in the melody follows:

Second string vibrates.



The combination of the second sound with the first note is something other than a simple addition of notes. Once the second sound terminates, it creates a new sense of both notes. It brings about a new understanding of the note previously heard in combination with itself.

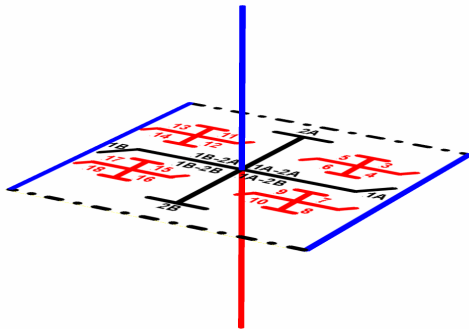


Second note is heard.

And then a third sound becomes part of the melody,

Third string vibrates.

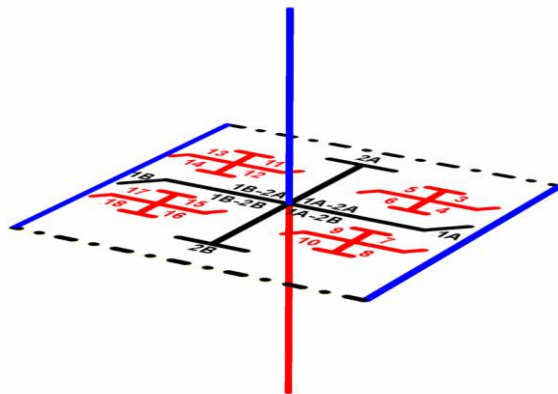
$$2 + 3 = 5$$



3

And followed, upon its termination, by the understanding of the three notes collectively:

5



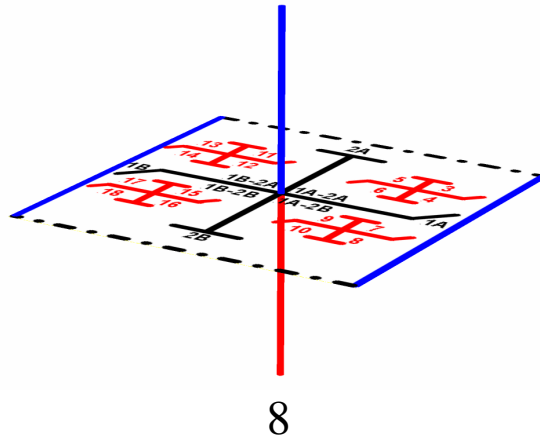
$$3 + 5 = 8$$

Third note is heard.

And then a fourth note...

Fourth string vibrates.

$$5 + 8 = 13$$



By extending this series of sums into a pattern we have the Fibonacci series, to wit:

1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, etc.

Joining these numbers into fractions in an effort to determine a common ratio, we have:

$$\frac{1}{1} \quad \frac{2}{1} \quad \frac{3}{2} \quad \frac{5}{3} \quad \frac{8}{5} \quad \frac{13}{8} \quad \frac{21}{13} \quad \frac{34}{21} \quad \frac{55}{34} \quad \frac{89}{55} \quad \dots$$

This continuing series renders the constant $\phi = 1.6180\dots$

Distance and Strength

In the course of exploring the possibility that this sort of analysis is indeed found within that available economic data, it appears quite clearly in the first volume of essays that the historic development of the United States follows precisely this ratio of development over very strictly set 14-year intervals of time. A sequential progression of four such intervals results in a circuit of 56-years, better known as the Long Wave or Kondratiev Wave in the economic literature.

If the same “fifth dimension” is found resident in physics, how might this be displayed in the data?

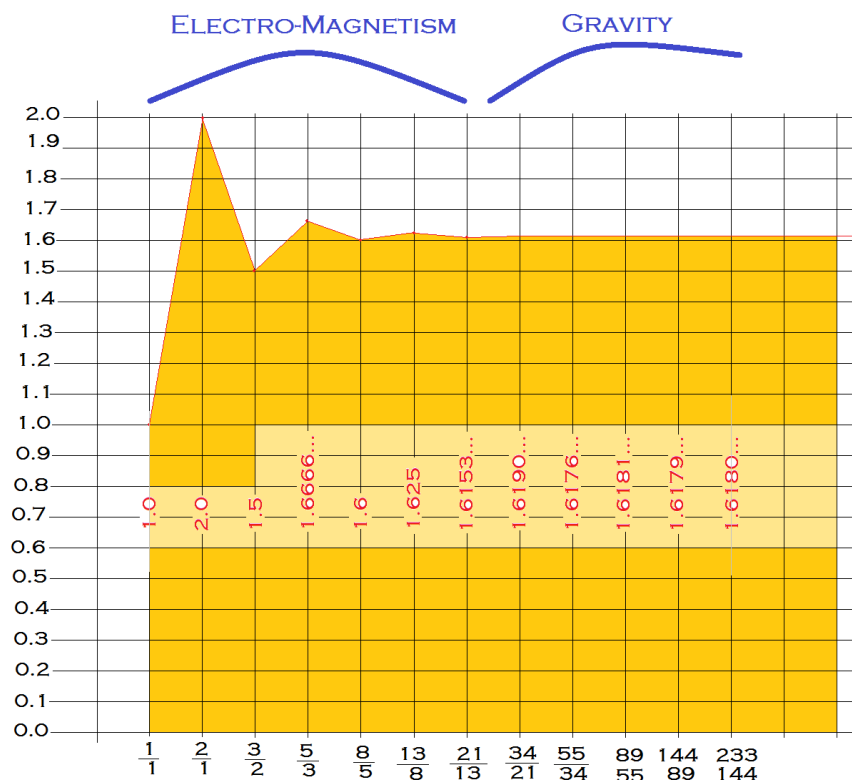
If we imagine the “blinking” of the universe to go on at tremendous speeds, then it is possible that during the very short interval of time necessary for one frame of time to separate itself into the next frame of time according to this circuit, we may have the operation of consciousness at small distances, i.e. the distances resident within atoms.

On the other hand as these frames extend over longer and longer periods of time, we may find the subsequent ratios far more evenly based upon the constant 1.6180...

Let us imagine that the organizing power of these relationships is expressed as a function of distance in the frames of the three-dimensional movie proposed at the outset of this Introduction. In other words, for every ratio which is created by this oscillation between “sound” and “note” we will count a single electron diameter.

The organizational power of the fifth dimension might be expected to be very strong over the first few ratios because the distance between the ratios is relatively great, i.e. 1:2, 2:1.5, 1.5:1.666..., etc. As more ratios are added, however, the power of this organizational force must diminish to a fraction of its strength at short distances. Nevertheless the exact nature of this power does not diminish at great distances (number of ratios) but becomes ever more exact.

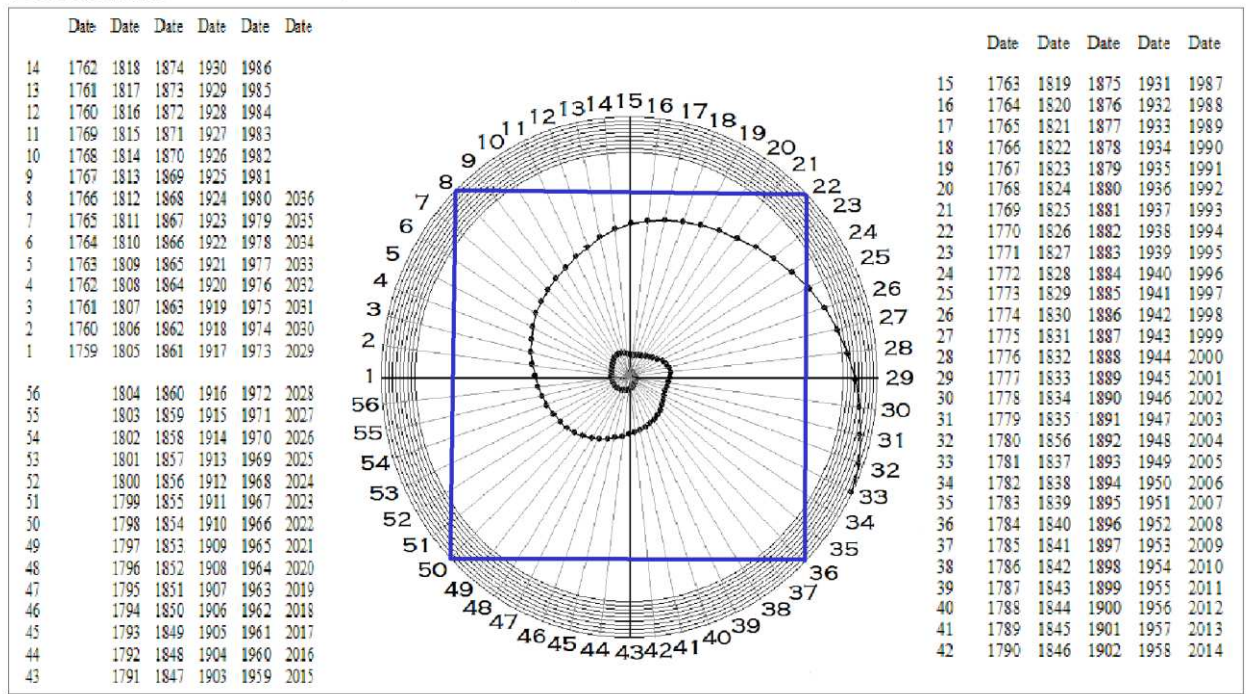
In effect, the same “fifth dimension” of consciousness may be responsible at short distances for the existence of electro-magnetism, and at great distances for the existence of gravitational attraction between massive bodies.



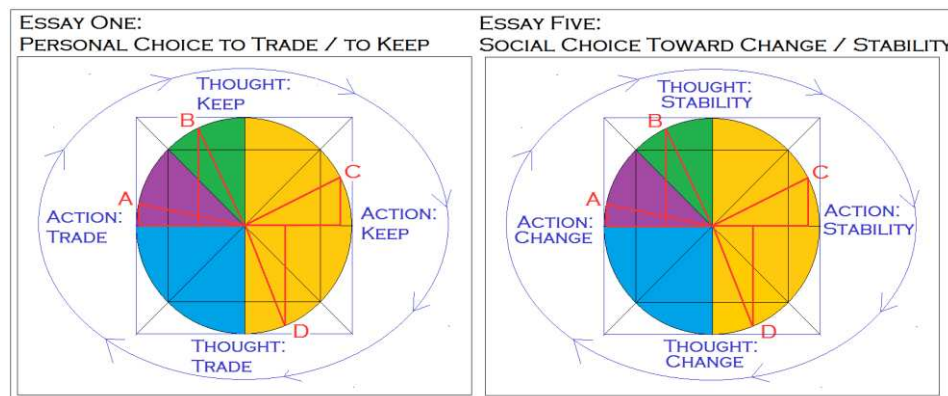
Conclusion

The geometric ratios of $1 : \phi$ ($1 : 1.61803\dots$) and $1 : \pi$ ($1 : 3.14159\dots$) appear quite clearly in the analysis provided. This is particularly apparent in the form of “the GNP Spiral,” a 56-year cycle of the Gross National Product of the United States, 1868 to present. (Albers and Albers, 2011) “U. S. GNP” is defined as the market value of all products and services produced in one year by labor and property supplied by the residents of a country. This mathematically exact spiral provides the basis for making quite specific predictions as to the future course of social and economic development in the United States and Europe as guided by various key dates, or “crises.”

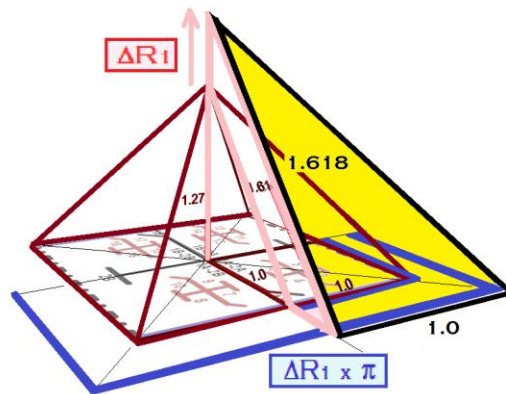
DIAGRAM 4-7. THE "GNP SPIRAL"



The ability to map out such a specific development of real GNP over the course of American economic history suggests strongly that the model for consumer choice in Essay One is copied as a larger fractal over time by the economy at large as demonstrated in Essay Five.



At the conclusion of the third volume the following geometric model – one which incorporates the ratios of both $1 : \phi$ and $1 : \pi$ – is proposed as the central dynamo or “fractal” governing the historic development of the United States. I suggest that this is a model of the “consciousness” of the United States, i.e. the central, organizing core of its economic and social being. The proportions of this figure are virtually identical to those of the Great Pyramid of Giza.



I argue that this ordering power of consciousness as displayed in macro-economics is operable also in the physical sciences as “the fifth dimension.” This as yet undiscovered “fifth dimension” was hypothesized to exist by Theodor Kaluza in 1919 in addition to the three well-known dimensions of space and one dimension of time. This “fifth” dimension allowed him to unify Maxwell’s equations on electro-magnetism with Einstein’s General Theory of Relativity.



Consequently an understanding of the historic macro-economic and social development of the United States – its “consciousness” – may provide insight into the operation of the physical universe through the similar operation of consciousness throughout reality as its fifth dimension.

These essays are written in the hope that serious research may begin as to the relationship between the construction of the Great Pyramid of Giza and its apparently directly relationship with the macro-economic structure of the United States and the combination of electro-magnetism and gravity as found in the thought of Theodore Kaluza. In this manner it is perhaps possible that the earliest insights of Parmenides and Zeno will bear remarkable fruit in the science of the 21st century.

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February 15, 2013